IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Challenger et al.	**Examiner:** Blackwell, James
Serial No.:	09/283,561	**Group Art Unit:** 2178
Filed:	April 1, 1999	**Docket:** YO999-011 (8728-255)
For:	METHOD AND SYSTEM FOR EFFICIENTLY CONSTRUCTING AND CONSISTENTLY PUBLISHING WEB DOCUMENTS	

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

AMENDED APPEAL BRIEF

This Amended Appeal Brief is in response to the Notification of Non-Compliant Appeal Brief dated August 26, 2008; Applicants submit herewith the following:

1) Replacement Status of the Amendments as required by 37 CFR 41.37(c)(1)(iv) beginning at page 2; and

2) Replacement Summary of the Claimed Subject Matter as required by 37 CFR 41.37(c)(1)(v) beginning at page 3.

Appeal from Group 2178

F. Chau & Associates, LLC
130 Woodbury Road
Woodbury, New York 11797
TEL: (516) 692-8888
FAX: (516) 692-8889
Attorneys for Appellant

IV.   STATUS OF AMENDMENTS

No claim amendments have been filed or entered subsequent to the <u>Final Action</u>. The Amended filed May 2, 2005 inadvertently included a claim status of "Currently Amended" in connection with claim 48, however the claim was un-amended – no amendments were made.

VI. SUMMARY OF CLAIMED SUBJECT MATTER

In general, the claimed inventions are directed to methods for computerized *publication* of publishable objects (e.g., documents such as web pages). The process of "*publishing*" an object includes making the object visible to the public or a community of users. For example, in generating Web content, publishable Web pages (known as "servables") may be published on Web sites. For illustrative purposes, the claimed subject matter will be described with reference to exemplary embodiments described in Appellants specification (hereinafter, <u>Spec.</u>) and accompanying figures, although nothing herein shall be construed as unduly limiting the scope of the claimed subject matter.

The claimed inventions provide methods for *publishing* objects (e.g., web pages) based on one or more *consistency constraints* that enable publishable objects to be published in a consistent manner and in particular, consistent publication of publishable objects that are constructed with *fragments*. As discussed in Appellants' specification, a *fragment* is an *object* which is used to construct a *compound object*. An *object* is an entity which can either be published or is used to create something which is publishable. *Objects* include both *fragments* and *compound objects*. A *compound object* is an *object* constructed from one or more *fragments*. A publishable *object* may include a *fragment* which in turn includes another *fragment*, etc. (See <u>Spec.</u>, page 10, lines 1-15).

In one exemplary embodiment of the invention, when Web pages are constructed using *fragments*, the Web pages should be published in a consistent manner as Web pages are created or updated so that the Web site will look consistent. The concept of "*publishing consistency*" is generally explained with reference to the illustrative example of FIG. 1 and corresponding description in <u>Spec.</u> FIG. 1 depicts three servables (publishable objects) **S1**, **S2** and **S3**, where

S1 includes *fragments f1* and *f2*, **S2** includes *fragment* **f1** and **S3** includes *fragment* **f2**. In the example, servables **S1** and **S2** include a *common fragment* **f1**. If *fragment* **f1** is updated/changed, updated versions of **S1** and **S2** should be published concurrently, otherwise, the Web Site will look inconsistent. Further, since servables **S1** and **S3** include a common *fragment f2*, if *fragment* **f2** is *updated/changed*, updated versions of both **S1** and **S3** should be *published* concurrently to maintain consistency of the web site. By way of further example, if both *fragments* **f1** and **f2** are *updated/changed*, updated versions of **S1, S2**, and **S3** could be *published* concurrently to maintain *consistency*, even though **S2** and **S3** do not include a *common fragment*. (See Spec., page 11, lines 1-20).

In accordance with the invention, the process of "*publishing*" an *object* is decoupled from the processes of *creating* or *updating* the *object* and the process of *publishing* generally occurs after the *object* has been *created* or *updated*. (See, e.g., Spec., page 10, lines 11-17). For example, FIG. 2 of the Spec. is a flow diagram that illustrates a method for efficiently constructing objects and publishing objects. In FIG. 2, the process steps (100, 110, 120 and 130) include methods for determining a set of objects *S* that are affected by a change to one or more objects (set of objects *C*) in a set of object, and then determining an *order in which the objects in S can be updated in an efficient manner*. (See Spec., page 12, line 20 through page 14, line 16).

Moreover, in FIG. 2, the process step (140) includes methods for *publishing* the objects in *S* after such objects are *updated*. The *publishing* process can be performed such that all objects in *S* are published concurrently after the objects are *updated*. This "all-at-once" publishing process avoids consistency problems because all updated objects are published after they are updated. (Spec., page 14, lines 17-18).

In another embodiment, an "*incremental publication*" process can be implemented, which reduces the number of objects that need to be published in a single atomic action. For incremental publishing, methods are implemented to *determine an order in which updated objects can be published according to one or more specified consistency constraints such that incremental publishing maintains consistency.* With incremental publishing, one updated object or one group of updated objects in *S* can be published <u>before</u> another updated object or another group of updated objects in *S*. (See <u>Spec.</u> page 14, line 15 thorugh page 15, line 16). To support incremental publication, methods are provided for determining groups of objects that can be published together. (See, generally, Fig. 5 and corresponding description in Spec.).

<u>Independent **Claims 16** and **42** broadly embody features as described above and recite:</u>

A method for publishing a plurality of objects comprising the steps of:
providing a plurality of objects, including compound objects;
partitioning at least some of the plurality of objects into a plurality of groups such that if two compound objects are constructed from at least one common changed fragment, then the compound objects are placed in a same group; and
publishing all objects belonging to a same group together.

In general, **Claims 16** and **42** recite a method for publishing objects in accordance with a consistency constraint whereby a group of objects having a *common fragment* whose value has changed are published together. The method includes *providing a plurality of objects, including compound objects.* As noted above, an *object* is an entity which can either be published or is used to create something which is publishable, wherein o*bjects* include both *fragments* and *compound objects,* wherein a *compound object* is an *object* constructed from one or more *fragments*. (See Spec. p. 10, lines 1-15). **Claim 42** further recites a program storage device

5

readable by machine, tangibly embodying a program of instructions executable by the machine for performing the claimed invention (see, e.g., <u>Spec.</u>, p. 12, lines 7-13).

The method further includes *partitioning at least some of the plurality of objects into a plurality of groups.* The *partitioning* is performed based on a consistency constraint whereby *two compound objects will be placed in a same group if the two objects are constructed from at least one <u>common changed fragment</u>.* (See, e.g., <u>Spec.</u>, p. 11, lines 1-20) Thereafter, all *objects belonging to a same group are published together.*

Furthermore, in another exemplary embodiment as recited in **Claim 17**, the publishing step is performed such that *for at least two of the plurality of groups, publishing all objects belonging to a first group before publishing any objects belonging to a second group.* (See, Spec. P. 14, line 15 ~ p. 15, line 10).

In another exemplary embodiment as recited in **Claim 18,** the step of publishing may include *delaying publication of a first object until a second object which is referenced by the first object is published.* (See, Spec. P. 14, line 15 ~ p. 15, line 16).

The subject matter of **Claims 43** and **44** is similar to that of **Claims 17** and **18**, respectively, so the above summary description of such claims is applicable.

<u>Independent **Claims 53 and 75** broadly embody features as described above and recite:</u>

A method for publishing a plurality of objects comprising the steps of:
providing a plurality of objects;
constructing at least one graph, the at least one graph including nodes representing at least some of the plurality of objects and edges for connecting nodes having relationships, at least some of the edges being derived from at least one consistency constraint;
finding at least one strongly connected component in the at least one graph; and

publishing a set of objects belonging to a same strongly connected component group.

The method of **Claims 53** and **75** can be explained with reference to exemplary embodiment of FIG. 5 and other relevant description in the Spec. In general, the invention of **Claims 53** and **75** provide methods that implement graph data processing techniques for determining groups of objects that can be published together based on one or more specified consistency constraints. More specifically, the method includes *providing a plurality of objects* (as noted above, an *object* can be a *fragment* or a *compound object* (see Spec. p. 10, lines 1-15)). **Claim 75** further recites a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine for performing the claimed invention (see, e.g., Spec., p. 12, lines 7-13).

The method of **Claims 53** and **75** further includes *constructing a graph that includes nodes which represent at least some of the plurality of objects. The graph includes edges for connecting nodes having relationship. At least some of* the edges are derived from at least one consistency constraint. In the exemplary embodiment of FIG. 5, step 410 depicts a method for creating a consistency graph in which the graph vertices/nodes represent servables (publishable objects) and edges between vertices/modes. The edges between the vertices/nodes comprise *"consistency edges"* between vertices/nodes (objects). The *consistency edges* are based on one or more *consistency constraints* that imply an order in which the objects should be published to achieve publishing constancy. In other words, the consistency edges do not imply an order in which objects are created/updated, only an order in which the objects are published (see, e.g., Spec. p. 17, lines 4-12).

The method of **Claims 53** and **75** further includes *finding at least one strongly connected component in the at least one graph,* and then *publishing a set of objects belonging to a same strongly connected component group.* In the exemplary embodiment of FIG. 5, steps 420 and 430 depict methods for *finding strongly connected components* using graph traversal methods, wherein each strongly connected component corresponds to a set of servables (objects) that can be published together and publishing the objects according to strongly connected components (see, e.g., Spec. p. 17, line 13 – p. 18, line 10).

In exemplary embodiments of the invention as recited in C**laims 55** and **56**, the claimed "finding" step of **Claims 53** and **75** comprises *topologically sorting at least part of the graph,* wherein the claimed publishing step of **Claims 53** and **75** *comprise examining objects in an order defined by the topological sort,* and *when an unpublished object is examined, publishing the unpublished object together with all objects belonging to a same strongly connected component.*(See, e.g., **Claim 56**)

In another exemplary embodiment of the invention as recited in **Claim 57**, *the at least one consistency constraint* (in **Claims 53** and **75**) *includes delaying publication of a first object before a second object which is referenced by the first object is published.* For example, as recited in **Claim 58**, delayed publication is warranted *wherein the first and second objects include Web pages and at least one edge between the objects corresponds to at least one hypertext link.*

In another exemplary embodiment of the invention as recited in C**laims 59**, *an edge exists from a first object to a second object in at least one of the at least one graphs if the second object has a reference to the first object.* More specifically, in the inventions of **Claims 53** and

75, a consistency edge may exist between two servables if there is a hypertext link from one servable to the other.

In another exemplary embodiment of the invention as recited in **Claim 60**, *the at least one constancy constraint* (in **Claims 53** and **75**) *includes publishing two compound objects together if the two compound objects are both constructed from at least one common changed fragment.* By way of specific example, *consistency edges* can be used to indicate that two servables both embed a common fragment whose value has changed and thus are to be published concurrently.

The subject matter of **Claims 55**, **56**, **57**, **58**, **59**, and **60** is similar to that of Claims **76**, **77**, **78**, **79**, **80** and **81**, **17** and **18**, respectively, so the above summary description of such claims is applicable.

The above replacement sections are believed to cure the supposed deficiencies in the

Appeal Brief.

Early and favorable consideration is respectfully requested.

Respectfully submitted,

Dated: September 26, 2008   By: /Nathaniel T. Wallace/
                                         Nathaniel T. Wallace
                                         Reg. No. 48,909
                                         Attorney for Applicants

F. CHAU & ASSOCIATES, LLC
130 Woodbury Road
Woodbury, New York 11797
TEL: (516) 692-8888
FAX: (516) 692-8889